Science Lesson Plans

Level 2

Term 4

Science Lesson Plans

Level 2

Term 4

lesson Plans.

Week: 1.
Term: 4

Topic : Movement.

Level 2		Structures and mechanisms
Term 4	Lesson Plan	
Week 1		
Day 1		

Topic: Movement
Objective: To observe the pattern of spinning movement of objects
Activity: Spinning of objects
Materials: Different objects such as empty plastic bottles, button, coins, pencils, rulers, pens, top, a book etc.
Procedure
Warm-up Q/A
- Spin a top on your table and ask what is happening?
- Students responses might include the top is rotating spinning)
- What makes it spin? (Force of hand)
- Then show them a book and ask
- Do you think this book will spin like this top?
- Try to spin the book. See what happens?
- Then tell the students that now they will try to spin different objects and see which ones spin better?

Activity
- Divide the students into groups
- Distribute different objects among each group.
- Ensure each set contains all types of objects.
- Draw this chart on the board.
- They will record the observations in the chart for example.

1	Best	Button
2	Bad	Pen
3	Worst	Book

- And ask them to copy it in their notebooks.
- Explain
- Students will test the objects by spinning them.
- Then rate and number their spinners from best to worst. Record this in the chart.

Follow-up discussion
- Invite the children to share their results.
- Which objects spin best?
- Which objects spin worst?
- Then ask what did you learn from this activity?

Explanation
- Explain, Force of your hand put the objects into spinning motion.

- Spinning of the objects depends upon their shape and weight.
- You must have noticed that round and lightweight objects spin best.

Wrap-up Q/A

Do all objects spin in the same way?
Which objects spin best?

Level 2	Lesson plan	Structures and mechanism
Term 4		
Week 1		
Day 2		

Topic: movement
Objective: to observe the pattern of swinging movement of an object.
Activity: 1 Pendulum movement
Activity: 2 written work
Materials: small wooden board, cotton string, eye screw, two chairs, ball and stopwatch.
Procedure:
Warm-up Q/A.

- Ask, how many of you like to sit and move on a swing?
- What happens when you sit on a swing?
- How do you make a swing move?
- If you do not push it, does it keep on moving?
- What do you do to move it?
- Then show the students a pendulum already prepared by tying a string on a ball or any round small object.
- Swing it and ask, what is it?
- Is it like the swing you play on?
- Then tell it is a pendulum.
- Ask have you seen a pendulum anywhere? (in the wall clock)
- Listen to their responses and then tell them they will experiment to see how pendulum moves.

Activity: 1

- Set up a pendulum by placing an eye screw into aboard.
- Suspend the board between the backs of two chairs.
- Fasten a ball to a piece of string.
- Attach the string to the board in eye screw.
- You can set up more than one pendulum in a large class.
- Divide the class into groups.
- Children can sit on the floor and explore the action of the pendulum.
- Tell the students to swing it and observe and record,
- Help the students to record time with the stop watch.
- They should observe and note down the observations,
- How long does it swing?
- Do big swings take longer to stop than short swings?
- How do you make longer swings?

Follow-up discussion

- Invite the students to share their observations.
- Ask,
- How long does it swing?

- Do big swings take longer than short swings?
- How do you make longer swings?
- What makes the pendulum move?
- What makes a longer swing?
- What makes a shorter swing?
- Do you think pendulum will move forever when you make it move?
- What is the movement of pendulum called?
- Ask, what did you learn from this activity?

Activity: 2 written work in note books

- Draw a pendulum
- Answer these questions
- What makes the pendulum move? (force)
- What makes a longer swing? (more force applied)
- What makes a shorter swing? (less force applied)
- Do you think pendulum will move forever when you make it move? (no)
- What is the movement of pendulum called?(swinging movement)

Wrap-up Q/A

What is the pendulum movement called?

Level 2	Lesson plan	Structures and mechanism
Term 4		
Week 1		
Day 3		

Topic: Movement
Objective: To observe the pattern of rolling movement of an object
Activity: Which things roll best?
Materials: wooden board, few books, different objects such as balls, pencils, books, eraser, pine cone as many objects as you can find,
Procedure
Warm-up Q/A

- Ask,
- What happens when you go on a slide? (They slip)
- What is a slide? (It is an inclined plane)
- Ask, What happens when you drop something from top of the slide? (It rolls down)
- Show them your objects and ask do you think all of these will roll?
- Then take now we will test these to see how many can roll?

Activity:

- Draw this chart on the board with names of objects that you will use e.g.

Object	Good roller	Bad roller	Not a roller
Ping pong ball Book Pine cone			

- Ask the students to copy it in their notebooks.
- Then,
- Set up a ramp in front of the class.
- To set up the ramp, take a length of a smooth wooden board.
- Rest one end of the wood on a book or books to make a slope.
- Explain the students that they will test how these objects roll.
- Invite the students in pairs and let them test few objects by rolling them on the ramp.
- Before testing each object ask them to guess whether it will roll or not.
- Tell the students to record the rolling of objects in the notebooks.
- Invite all the students one by one to test the objects.

Follow up discussion

- Invite few volunteers to share their results.
- Ask, what did you learn from this activity?

Explanation

- Explain,
- Rolling movement of an object depends upon its shape and the surface.
- Shape of the object makes it a good or bad roller or no roller at all.

Activity: written work
Task:

- Draw any three objects, which you think can roll?
- Draw any two objects you think cannot roll?

Answer these questions

- What makes an object a good roller?
- Rolling movement of an object depends on what?

Wrap-up Q/A
What makes an object a good roller?

Level 2	Lesson plan	Structures and mechanism
Term 4		
Week 1		
Day - 4		

Topic: movement
Objective: To observe the pattern of vibrating movement of an object.
Activity: making a musical instrument
Materials: shoe box, rubber bands, balloons, pencil, ruler, paper or plastic cups, scissors.
Procedure:
Warm-up Q/A

- Have students gently rest their fingers over their vocal cords and saying 'Ahhh'and 'Eeee'.
- Ask, What do you feel? (Something moving)
- Explain that they are feeling vibrations occurring in their vocal cords, where all sounds they make with their voices come from.
- Them have them place their fingertips against their lips while they simultaneously blow and hum.
- Ask children to identify things they have which vibrate.
- Then tell you can see vibrating objects around you because vibrations make all sounds.

Demonstration/explanation

- Hold one end of a ruler on the table and twang the other end.
- Ask, what do you see?
- What is this movement called? (Vibrating movement)
- Then write the word vibrating on the board and write, Vibrating means moving backwards and forwards very quickly.
- Twang the end of the ruler and tell,
- This is the same kind of movement you felt in your vocal cords and on your lips.

Activity

- Divide the children into groups.
- Distribute the material.
- Divide the tasks among different groups.

Task 1 making a shoebox guitar.

- Stretch rubber band s over the empty shoebox.
- Tell the students to pluck the strings and observe what happens?
- How do the rubber bands move?
- What is the movement called?

Task 2 making a paper or plastic cup drum.

- Cut the balloon in square.
- Stretch it over the paper or plastic cup.
- Secure it with the rubber band.
- Strike the top with a pen-''

- Observe what happens to the balloon skin?
- How does it move?
- What is this kind of movement called?
- Put some grains of rice or pencil shavings on the balloon skin and strike with a pencil. Observe how it vibrates.

Follow-up discussion

- Invite the students to share their models and observations.
- Ask,
- What did you observe?
- Does it make sound? (yes it makes sound)
- What causes this sound?(vibrations make the sound)
- What is this kind of movement called?
- What is vibrating movement? (Quick backward and forward movement is vibrating movement)

Explanation

- Explain,
- Quick backwards and forwards movement is called vibrating movement. String and skin of your instrument move backward and forward this movement makes sound.

Wrap-up Q/A

What is vibrating movement?

		Structures and mechanism
Term 4	**Assessment**	
Week 1		
Day 5		

Note: Use worksheets and written work given with the lessons for assessment

Science lesson plans

level: 2
Term: 4
Week: 2.

Topic : Endangered Species.

Level: 2

Term: 4

Week: 2

Day: 1

Topic: Endangered Species.(Elephants)

Objective: Understand about endangered species.

Material: Pictures of Elephant.

Warm up Q/Ans:

- Which animal do you like most?
- Have you ever visited to zoo?
- Have you seen elephant?

EXPLANATION:-

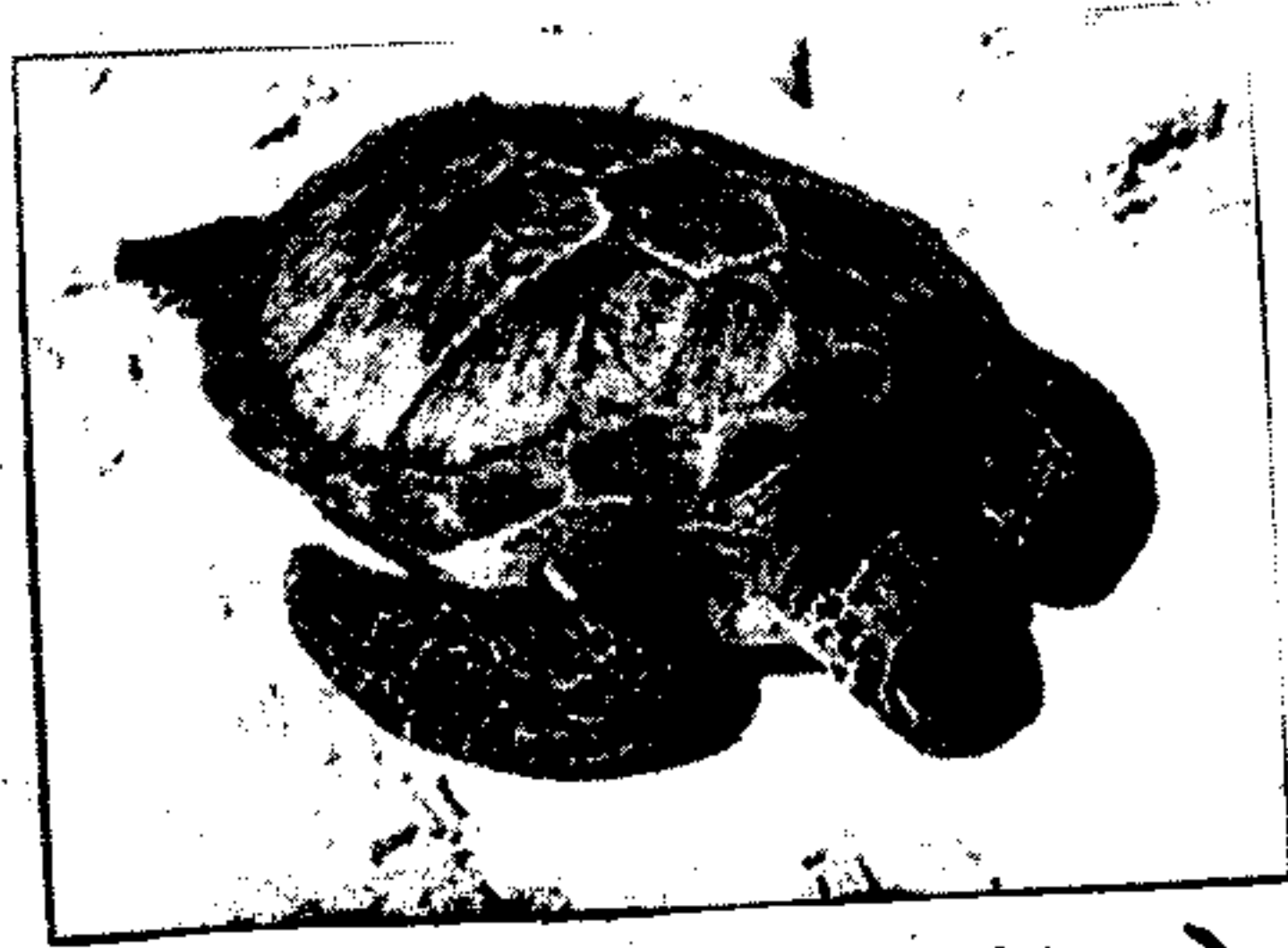
Elephants are the largest living land animals with adults. sometimes weighing six tons or more. African elephant is larger and more plentiful than Asian elephant. Huge and and powerful consumer elephant are considered to be a Key stone. Species in their enviorment. affecting biodiversity in the region they inhabit. They open area of forest where light-dependent plants can take hold. for example. creating habitat for grazing. animal.

Well elephant dig in search of water are used by virtually all other wild life in a given region. Particulary during period of drought.

evel: 2.

Term: 4.

Week: 2.

Day: 2.

Topic :- Endangerad Species (Marine Turtles)

objective. understand about endangerad species.

Material:- Pictures of marine turtles.

warmup Q/A.

- Have you ever seen turtle?
- Have you information where it found?
- Do you like turtle?
-

.Explanation:-

.Marine turtle having traveled the seas for over 100 million years. Marine turtles survived the extinction of the dinosaurs and are still present in the world's ocean today.

Unfortunately threats like hunting for meat, shell and eggs; habitat destruction; fisheries by catch pollution; boat strikes; ended this species.

Level: 2

Term: 4

Week: 2

Day: 3

Topic: Endangered species (Snow Leopards)

Objective: Understand about endangered species.

Material: Pictures of Snow Leopards.

Wram up Q/A

- Have you ever seen Snow leopard in your life?
- Have you ever visited the zoo?
- Do you like snow leopards?
-

Explanation:-

- The snow leopard is an endangered big cat and
that inhabits the rugged (healthy, strong) and Himalyan region.
mountain of central Asia and Himalyan region.
It is currently threatened by hunting for the
illegal wild life trade and revenge killings by
herders (group of people, group of animal) habitat loss
and diminished food supply. The remaining animals
live in only 12 countries in South & Central Asia.

Level: 2
Term: 4
Week: 2
Day: 4

Topic: Endagered species (Pandas)

Objective: Understand about endangered species.
Material: Pictures of Pandas

Warm up Q/Ans

- Have you seen any geographical film about Pandas.
- ~~Are~~ Do you like Pandas.
- Have you ever seen this specie in your own country.

Explanation

The lovable and charmastic panda is one of the most popular animals in the world. Unfortunately it is also one of the most endangered.
Found only in China, one of the world's most populous countries the giant panda clings to survival facing habitat fragmentation as its greatest threats. It is estimated that as few as 1,600 pandas remain in the wild today.

level: 2
Term: 4
Week: 2
Day: 5
Topic: Endagered Species
Objective: Ask Q/Ans about pre-lesson or take assessment
Material: None

Assessment

Lesson Plans

Level 2
Term 4
Week 3

Week	Curriculum Strand	Topic	Day	Specific Objectives	Home work
3	Earth and space systems	Air and water in the environment	1	To understand the presence of air	
3		do	2	To understand the presence of air	
3		do	3	To understand that air occupies space	H.W
3			4	To understand that air has weight	
3			5	To understand that air has weight and takes up space. Written work.	H.W
3		do	6	Assessment	

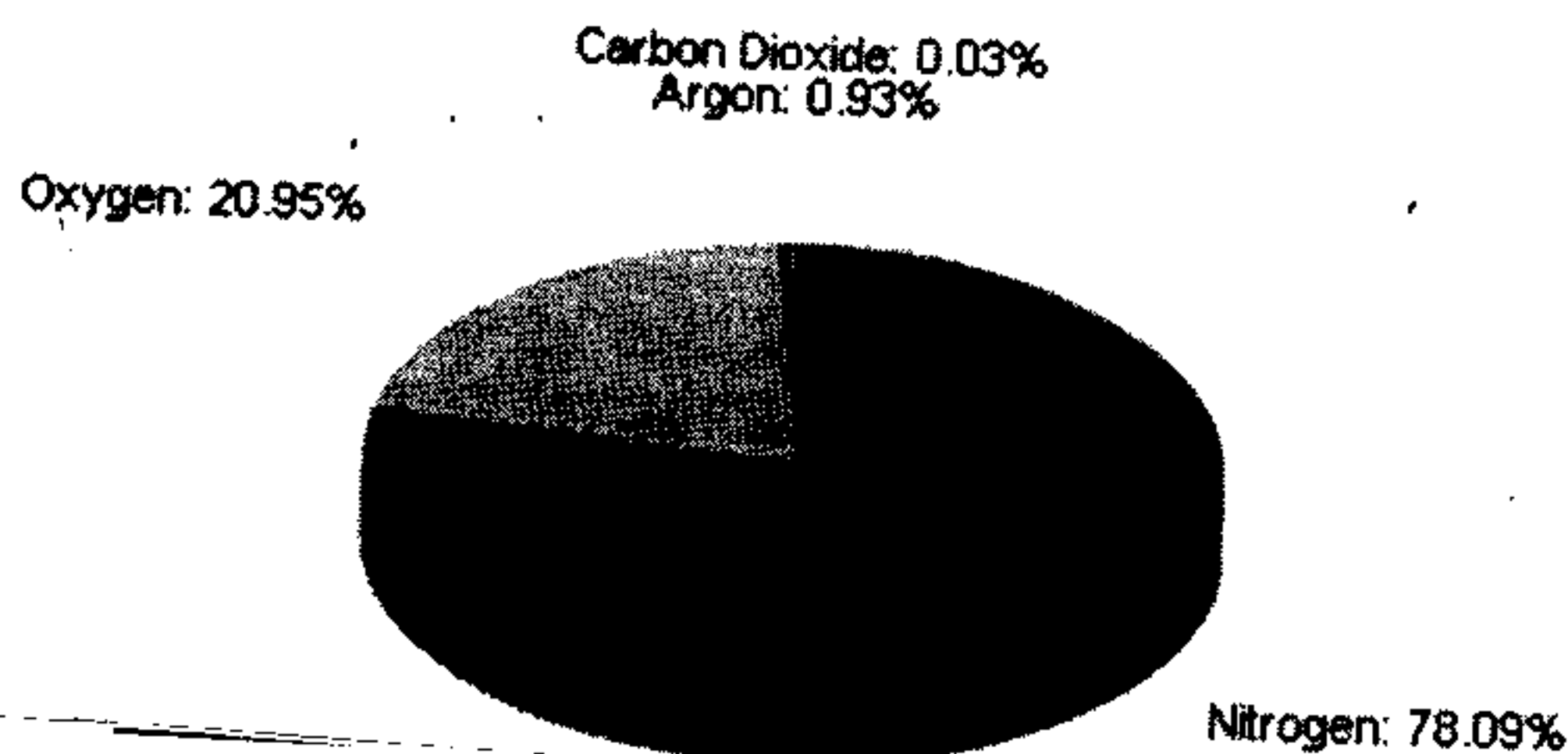
Level 2 Week 3
Term 4 Day 1

in environment.

Composition of Air

art by amCharts.com

Composition of Air

Carbon Dioxide: 0.03%
Argon: 0.93%
Oxygen: 20.95%
Nitrogen: 78.09%

Component	Symbol	Volume	
Nitrogen	N_2	78.084%	99.998%
Oxygen	O_2	20.947%	
Argon	Ar	0.934%	
Carbon Dioxide	CO_2	0.033%	
Neon	Ne	18.2 parts per million	
Helium	He	5.2 parts per million	
Krypton	Kr	1.1 parts per million	
Sulfur dioxide	SO_2	1.0 parts per million	
Methane	CH_4	2.0 parts per million	
Hydrogen	H_2	0.5 parts per million	
Nitrous Oxide	N_2O	0.5 parts per million	
Xenon	Xe	0.09 parts per million	
Ozone	O_3	0.07 parts per million	
Nitrogen dioxide	NO_2	0.02 parts per million	
Iodine	I_2	0.01 parts per million	
Carbon monoxide	CO	trace	
Ammonia	NH_3	trace	

Human Respiration

The air that leaves a person's lungs during exhalation contains 14% oxygen and 4.4% carbon dioxide.

Atmospheres with oxygen concentrations below 19.5 percent can have adverse physiological effects, and atmospheres with less than 16 percent oxygen can become life threatening.

Level 2		Earth and Space systems
Term 4	Lesson Plan	
Week 3		
Day 2		

Topic: Air and water in the environment

Objective: To understand the presence of air

Activity: Presence of air
Materials:
The following materials are needed for the teacher demonstration: Two large soft drink bottles, pencil, balloon, and container with warm water.
Procedure
Warm-up Q/A
- Ask your students to list their basic needs.
- Talk about air.
- Can the students see air? How do they know it is there? (feel it, smell it)
- Ask them to,
- Breathe, blow air out of their nose and mouth.
- Fan your face with a piece of paper.
- What do you feel?
- Ask, does air have smell?
- Does air have colour?
- Does air have shape?
- Listen to their responses.
- Then demonstrate.

Activity: Demonstration

- Set up two large soft drink plastic bottles.
- Place a pencil into one, but leave the other bottle empty.
- Have the students verify that one bottle is empty.
- Next attach a small balloon over the top of the empty bottle.
- Then set the bottle in a warm container of water (the students should not be told this).
- As the students observe, the balloon slowly fills up.
- The students will discover that the bottle was not empty!
- It contained air, which filled up the balloon.

Follow-up discussion
- What did you learn from this activity?
- Can you feel air? How?

- Can you see air move? How?

Explanation

- Explain, that air is present around us.
- Air is a gas.
- Air is essential for us to live.
- You may not be able to see air, but you can feel air by looking at the objects, which move with the help of air.
- Such as leaves and branches of the trees move when wind blows.
- Air has no shape it takes up the shape of a container it goes into. It has no smell. It has no taste. It has no color.
-

Wrap-up Q/A

What is air?

How do we know air is around us?

Level 2		Earth and Space systems
Term 4	Lesson Plan	
Week 3		
Day 3		

Topic: Air and water in the environment

Objective: To understand air has weight.

Activity: Balancing balloons

Materials: a stick, two balloons, thread or string, and air of your lungs.

Procedure:

Warm-up Q/A

- **Ask,**
- What did we learn about air yesterday?
- Listen to their responses and ask,
- Do you think air has weight?
- Have you ever weighed air?
- Then tell, today we will learn that air has weight.

Activity

- Inflate two balloons and attach them to each end of a stick.
- Balance the stick by tying a string in the middle.
- Ask the students to observe what happens.
- Then pop one balloon.
- Observe what happens to the balance.
- Is the balance still balanced?
- Not anymore because air does have weight/mass.
- Repeat this experiment by inviting few volunteers from the students to hold the balance and pop the balloon.

Follow-up discussion

- Ask, what happened?
- Why is not the balance balanced after popping the balloon?

- What did you learn from this activity?

Wrap-up Q/A

Does air have weight?

4

Topic: Air and water in the environment

Activity: Written-work

Task:

Q.1 - Write the answers of the following questions.

i- What is air? How do we know air is around us?

2- What is the composition of air? Write the names of major gases present in air?

3- Does air have weight? Explain by giving example?

Level 2		Earth and Space systems
Term 4	Assessment	
Week 3		
Day 5		

Note: Use questions (written work) given with the lessons for assessment)

Lesson Plans

Level 2
Term 4
Week 4

Week	Curriculum Strand	Topic	Day	Specific Objectives	Home work
4	Earth and Space systems	Air and Water in the environment	1	To understand any object that moves through the air is being slowed down by air resistance (air resistance).	
4		do	2	To observe the movement of air and its effects.	
4		do	3	To observe the movement of air and its effects.	
4			4	To understand that air moves and has direction.	
4		do	5	Assessment	

Level 2
Term 4
Week 4
Day 1

Topic : Air and water in the environment.

4. Objectives Students will be able to:

i. Demonstrate that air is present in their environment
ii. Show that air is made up of more than one substance
iii. Identify the presence of the various parts of air.
iv. List the various uses of the parts of air.

5. Resources/materials

- Glass jars, candles
- Chemicals for testing-lime water, anhydrous copper sulphate.

6. Activities and Procedures Air is a mixture of gases. Some of these gases are elements, e.g. Oxygen, nitrogen and others are compounds, e.g. Carbon dioxide. The main gases in the air are nitrogen, 78%. Oxygen, 21%, others, 1%. Among the others are carbon dioxide, about 0.03%, noble gases, about 0.9% and varying amounts of water vapour depending on the weather.

The gases making up air can be separated by physical means. When a lighted candle is allowed to burn in a specified amount of air, part of the air is used up during the burning. The part of air which is used up during burning is oxygen. The other part which does not support burning is largely nitrogen. The test therefore for oxygen is to burn a substance in it. A glowing splint for instance is rekindled when plunged into a jar of oxygen. Carbon dioxide when bubbled into clear lime water makes it turn milky. The presence of water vapour in the air is shown by allowing white anhydrous copper sulphate to be exposed to damp air. After some time, the white substance becomes blue due to the water vapour in the air. It is therefore possible to demonstrate the presence of the named constituent of air. It is suggested that the series of experiments on air is preferably done by teacher demonstration.

The uses of the various parts of air can be summarised:

- Oxygen supports burning
- Nitrogen useful in the manufacture of fertilisers.
- Carbon dioxide is used by plants to manufacture their food
- Noble gases used in advertising lamps

7. Tying it all together Air is a mixture of gases and it is essential for life. The constituent gases of air are important to us. Simple chemical tests could be done to show the presence of the gases which make up air.

8. Assessment Teacher made tests to test the knowledge of the students about the composition of air.

Level 2		Earth and Space systems
Term 4	Lesson Plan	
Week 4		
Day 2		

Topic: Air and Water in the environment.

Objective: To observe the movement of air and its effects.

Activity: making air puffer or a hand fan (choose what is more suitable to you)

Materials: a small plastic bag, a small thick sponge, scotch tape, a large drinking straw, old news papers, few objects such as leaves, ping-pong ball, eraser, piece of paper cotton ball etc.(material should be sufficient for each group as per class strength).

Procedure

Warm-up Q/A

- Ask,
- What makes the leaves and branches of the trees move?
- What makes the clouds move?
- What else do you see moving around due to moving air?
- Then tell we will do an activity to see in what way moving air affects things.

Activity

- Divide the students into groups.
- Distribute the material to each group.
- They will make a puffer.
- Give instructions:
- Put the sponge in the plastic bag.
- Insert one end of the straw in the bag.
- Tape the bag shut around the end of the straw.
- Now your puffer is ready.
- Then use your puffer to move things.(leaves, ping-pong ball, eraser, piece of paper cotton ball etc.).
- Observe, which things are easier to move with the puffer?
- Which things are difficult to move with the puffer?
- Then draw a path on a piece of newspaper and try to move a ping-pong ball along the path.
- **Hand fan**
- Children can make a hand fan by folding the newspaper sheet in a fan shape.

Follow up discussion

- What made things move when you pressed the puffer? Moving air

- Why does moving air make things move? It has pressure (force)
- What did you learn from this activity? (Moving air has pressure. It can move things)

Explanation

- Explain, moving air is called wind. It has pressure and can move things.
- This is why when the wind blows you see things moving such as leaves and branches of trees, clouds and other things in the environment (clothes, banners, flags etc).

Wrap-up Q/A

What is moving air called? Wind

What happens when the air around us moves? It moves things

Level 2		Earth and Space systems
Term 4	Lesson Plan	
Week 4		
Day 3		

Topic: Air and water in the environment.

Objective: To observe the movement of air and its effects.

Activity: written work

Materials: pencils, note books, colors, chalk

Procedure

- Revise the concept introduced in the previous lesson.
- Write down the task on the board and explain it.

Task:

Q 1) What is moving air called?

Q 2) What happens when the air around us moves?

Q 3) Why does moving air make things move?

Draw few objects to show movement of the air.

H.W revise the work done in class

Level 2		Earth and Space systems
Term 4	Lesson Plan	
Week 4		
Day 4		

Topic: Air and water in the environment
Objectives: To understand that air moves and has direction.
Activity: 1 making a windmill
Activity: 2 making a wind vane
Materials:
1. Scissors, square sheet of paper, straight pin, pencil with eraser, piece of Crepe paper

2. Tag board, compass, felt tip pen, juice bottle, and straw.

Activity: 1

- Divide the students into groups.
- Group One will construct a windmill using the following directions:
- Fold the paper square diagonally.
- Fold it again. Now, when you open the paper and lay it flat out,
- it will have an "x" creased through it.
- Cut along each fold within one inch of the center.
- Pick up one corner and hold it in the center.
- Do this with each corner and staple. Stick a pin through the center and attach to an eraser.
- Mark one of the blades with a small streamer.

Activity: 2

- Group Two will construct a wind vane following these directions:
- Cut the shape of an arrow with a long narrow tab from the tag board.
- Curve the tip and insert the tab into the end of a straw.
- Insert the straw into the juice bottle.
- Mark the directions N, S, E and W.

- **Take both groups outside and break up into groups of two so that one person will have a windmill and one person will have a wind vane.**
- The windmill will measure the speed of the air by counting the number of times the streamer passes the pencil.

- The wind vane will point and indicate the direction of movement.
- Tell the students to note down their findings.

Speed of wind	Direction of wind

Follow-up discussion

- Invite the students to share their data with the class.
- Ask, what did you learn from this activity?
- Does air have direction?
- Does moving air have speed?
-

Explanation

- Explain,
- Air does move.
- Moving air is called wind.
- The speed of the wind can be measured and the direction can be calculated.

Wrap-up Q/A

What is wind?
Does moving air have direction?
Does moving air have speed?

Level 2		Earth and Space systems
Term 4	Assessment	
Week 4		
Day 5		

Task:

Q 1) What is moving air called?

Q 2) What happens when the air around us moves?

Q 3) Why does moving air make things move?

Q 4) Does moving air have direction?
Q 5) Does moving air have speed?

Q 6) Draw three objects to show movement of the air.

Lesson Plans

Level 2
Term 4
Week 5

Week	Curriculum Strand	Topic	Day	Specific Objectives	Home work
5	Earth and space systems	Air and water in the environment	1	Students will be able to identify benefits and uses of water to humans	
5		do	2	To understand importance of clean water	
5		do	3	To understand importance of clean water	H.W
5			4	To understand the properties of water	H.W
5		do	5	Assessment	

Level 2		Earth and Space systems
Term 4	Lesson Plan	
Week 5		
Day 1		

Topic: Air and water in the environment
Objective: Students will be able to identify benefits and uses of water to humans
Activity: Discussion, written work
Materials: glass with water, worksheet
Procedure
Warm-up Q/A

- Introduce the lesson by presenting students with a glass of water and ask
- Do you think water is important for us?
- Is it important for all living things or only for us?
- Can you live without water?
- Listen to students' responses.

Discussion

Then ask, think about all the ways you and your family use water.
Write student responses on the chalkboard.

Drinking Bathing Cleaning Washing Cooking

- Build up your list.
- Review the responses and ask if there are any other uses besides those given.
- Discuss briefly.
- Then ask,
- How water can be misused?

Throwing Spilling Wasting

Discuss briefly.
Activity: Written work

- **Distribute the worksheet and explain the task.**

Wrap-up Q/A

- How is water used?
- How can water be misused?

Level: 2 Term: 4
Week: 5 Day: 1

Uses of Water
Worksheet

Q 1) Circle the uses of water.

Washing,

Sailing

Drinking,

Cleaning,

Bathing

Washing hands

Throwing

Watering plants

Cooking

Spilling

Making tea

Putting off fire

Q 2) How can water be misused?

___

___

___

Q 3) Draw three living things, which use water.

Level 2		Earth and Space systems
Term 4	Lesson Plan	
Week 5		
Day 2		

Topic: Air and water in the environment

Objective: To understand importance of clean water for humans

Activity: 1 Filtering water, written work

Activity: 2 written work

Materials: glass jar, plastic funnel, filter paper, dirty water(water with sand and mud), pencils, colors

Procedure

Warm-up Q/A

- Ask, from where do you get water?
- Where do you find water in your school?
- Where do you find water in your home?
- Show them two glasses of water one with clean and other with muddy water.
- Ask,
- Which water would you use for drinking? (Clean water)
- Why is it important to clean water for drinking?
- Listen to their responses and briefly discuss.

Activity: 1

- Set up your filter apparatus (glass jar, plastic funnel, filter paper) and demonstrate how water is cleaned.
- Show the apparatus to the children and explain what each object is?
- Then pour dirty water on the filter paper and let it stand to observe how clean water passes through it drop by drop.
- Let the student observe it.

Follow up discussion

Show the students water in the jar and ask,

- How did this water become clean?
- Ask them to guess,
- Is it safe for drinking?
- If not why?
- If yes why?
- How can you make this water even cleaner?
- Do you clean water at home?
- How do you make water clean at home?

Explanation

- Explain,
- This water has become clean as all the dirt is left on the filter paper.
- Show them the filter paper with dirt on it.
- Explain what filter is?

- A filter is made of materials, which has many tiny holes in it.
- It is just like a very fine sieve that you use at home for separating tealeaves from tea.
- We can separate mud and dirt from water by using filter.
- This filter lets the water pass but stops the dirt from passing.
- It is important to filter the muddy water to make it clean.
- The water that we use from rivers, lakes and dams is filtered for use.
- Then tell although this water seems clean but still it is not safe for drinking because it contains germs, which we cannot see with our naked eyes.
- To make this water safe for drinking we can make the water even cleaner by boiling it.
- Boiling is one way of making water drinkable.
- Some chemicals like chlorine can also be added to water to make it clean.
- We must drink clean water.
- If we do not drink clean water it will make us sick.
- If the water that you use at home comes from a well or a stream then it must be cleaned for use.
- You can boil water to kill the germs in it or add chemicals.

Activity:2 written work in note books

Write these headings on the board and explain the task.
Task:
Date: ______________
Material: ____________
Things I noticed/ observed ______________________

A picture of what I saw:

Wrap-up Q/A

Why is it important to clean water for drinking?

H.W Students to ask parents how is water cleaned for drinkin

Level 2		Earth and Space systems
Term 4	Lesson Plan	
Week 5		
Day 3		

Topic: Air and water in the environment
Objective: To understand importance of clean water for humans
Activity: written work
Materials: chalk, pencils, colors
Procedure

Warm-up Q/A

- Ask, How is water cleaned at your home for drinking?
- Briefly revise the concept introduced in the previous lesson.

Activity: written work

Write down the task on the board and explain.

Task:

Q 1) Why is it important to use clean water for drinking?
To keep our selves healthy
To grow

Q 2) How can you make muddy water clean?
By filtering it
By boiling it

Q 3) How can you kill germs in water?
By boiling
By adding chemicals
By putting it in the sun

Q 4) Where do you find water in your school?
Q 5) Where do you find water in your home?

H.W Revise the work done in class.

Level 2		Earth and Space systems
Term 4	Lesson Plan	
Week 5		
Day 4		

Topic: Air and water in the environment

Objective: To understand about the properties of water

Activity: 1 water has no shape

Activity:2 written work

Material: Water, Many clear glass or plastic containers
Procedure:
Warm up Q/A

- Pour water into one of the containers
- Ask, Do you see water?
- What shape is the water?
- What color is the water?
- Does it have smell?
- Does it have taste?
- Can you feel water? How does it feel? Dry or wet?
- Can you pass your hand through it?

Activity:

- Pour water into different containers.
- Ask, what shape is water?

- **Explanation**
  We can see that water is wet, it doesn't have any real color, and it doesn't have any real smell to it.

- Water doesn't have any shape of its own. It will fill up and take on the shape of whatever container it goes into.

- Here we have different shapes and sizes of containers.
  When we poured water into all these different kinds and shapes of containers, the water took on the shape of the containers it was put into!

- Then, Empty one container.

- Pour water from another container into this one.

- Ask, What happens? The very same water that may have taken on the shape of a tall jug will take on the shape of a glass!

- Water has no shape because it is a liquid.

- All living things need water to live.

Follow up discussion

- What did you learn from this activity?

- Can you name any other liquid? (milk, oil etc)

Activity: 2 Written work

- Write the task on the board and explain.
  Wrap up Q/A

- Does water have smell, shape, and taste?

Task:

Q- II) Draw and color any two things which need water to live?
Q- I) Encircle the correct answer.

a) Water is a

Liquid
Solid

b) Water has

Shape
No shape

c) Water has
Smell
No smell

d) Water has
Colour
No colour

Level 2		Earth and Space systems
Term 4	Assessment	
Week 5		
Day 5		

Q- I) Encircle the correct answer.

a) Water is a

Liquid
Solid

b) Water has

Shape
No shape

c) Water has
Smell
No smell

d) Water has
Colour
No colour

Q 2) Why is it important to use clean water for drinking?
To keep our selves healthy
To grow

Q 3) How can you make muddy water clean?
By filtering it
By boiling it

Q 4) How can you kill germs in water?
By boiling
By adding chemicals
By putting it in the sun

Lesson Plans

Level 2
Term 4
Week 6

Week	Curriculum Strand	Topic	Day	Specific Objectives	Home work
6	Earth and space systems	Air and water in the environment	1	To understand water exists in three states	
6		do	2	To understand water exists in three states (Written work)	H.W
6		do	3	To understand air contains water	
6			4	To understand evaporation of water	H.W
6		do	5	Assessment	

Level 2		Earth and Space systems
Term 4	Lesson Plan	
Week 6		
Day 1		

Topic: Air and water in the environment

Objective: To understand that water exists in three states liquid, solid and gas

Activity: Observing 3 states of water

Materials/Preparation:

Fill a rubber glove with water and freeze the night before the lesson
you will also need: hot water in a flask, a pot, and a glass.

Procedure

Warm up Q/A

- Remind the students about previous lesson about water.
- Ask, Water is a liquid or a solid?
- Does it have any shape?
- Does it have color?
- Does it have smell/taste?
- Then Ask, have you ever seen water in a solid form?
- Have you ever seen water I a gas form?
- Listen to their responses.

Activity: 1 Demonstration

- Show students the hand-shaped ice sculpture.
- Ask, what is it?
- Have the students observe the hand and tell,
- It is ice. Ice is a solid form of water.
- Ask, How does water change into ice? (When water freezes it changes into ice)

Explanation

- Explain, when liquid water becomes very cold it freezes and changes into solid ice.
- Ice melts and becomes water again with heat.

Activity:2 Demonstration

- Then,

- Pour hot water in a bowl and place it on the table.
- Ask, What is happening?
- Ask the students to observe the water vapors.
- Can you tell what is coming out of water?
- Have you seen it before? Where?

Explanation

- Explain,
- The steam that you see coming out of the water is a gas form of water.
- Gas form of water is called water vapor. Water changes into gas when it is heated.
- The water vapor is a gas, as you cannot easily see it.
- Then explain, water is found in three forms, Liquid, solid and gas.
- Check the concept understanding by asking questions.
- Ask,
- In what three forms water is found?
- How does water become solid ice?
- How does water become gas (water vapor)?

Wrap-up Q/A

Drawing

- Ask the students to draw what they have observed and label it. (the hand sculpture as solid ice and water vapors coming out of glass).

Level 2		Earth and Space systems
Term 4	Lesson Plan	
Week 6		
Day 2		

Topic: Air and water in the environment

Objective: To understand that water exists in three states liquid, solid and gas

Material: pencil, chalk, notebooks, colors

Activity: Written work
Procedure

- Revise the concept introduced in the previous lesson.
- Write down the task on the chalkboard and explain.

Task:

- What are three forms of water?
- Draw to explain.
- How does water change into ice?
- How does water change into gas?
- What makes the ice melt?
-

H.W Revise the work done in class.

Level 2		Earth and Space systems
Term 4	Lesson Plan	
Week 6		
Day 3		

Topic: Air and water in the environment

Objective: To understand air contains moisture or water vapors.

Activity: moisture in the air
Materials: warm water, cold water, two glasses, ice cubes, mirror, and copy of worksheet for each child
Procedure
Warm-up Q/A

- Show an empty dry glass to the students then,
- Fill the glass with water and ice cubes.
- Put it on your table for some time and ask the students to watch.
- Ask the students what is happening?
- What do you see? (Water collects on the outside of the glass).
- Ask, Why are there water droplets on the outside of the glass?
- From where this water has come?
- Listen to their responses and then explain.
- There is moisture in the air, which means there is water in the air but we cannot see it.

Activity demonstration

- Fill another glass with warm water.
- Put it near the glass with cold water.
- Ask the students to observe. (No water collects out side the glass with warm water)
- Ask, why is there no water on the outside of the glass?
- Listen to their responses and then explain.

Explanation

- Explain there is water in the air, which is in the form of gas (water vapors).
- We cannot see it but it is there.
- When the air touches this glass of cold ice, the water vapors in the air cool down and change into drops of water.
- You can see these drops of water on the glass.

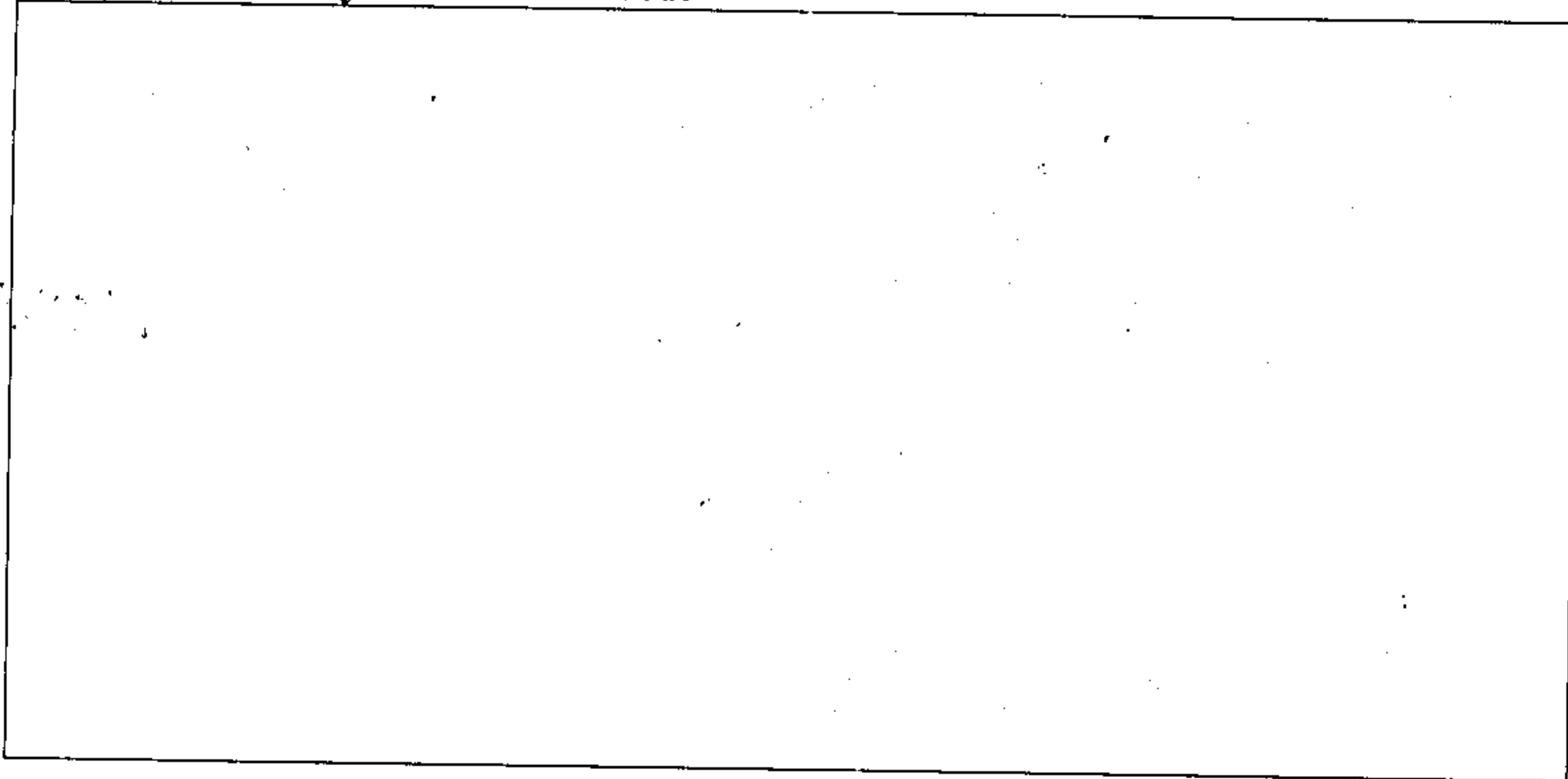
- You must have seen this happening at your home also.
- Then show them the glass with warm water then tell.
- The water vapors in the air are touching this glass also. But it is warm so the water vapors do not change in water droplets.

- But if we cool it down then you will see drops of water.
- Add some ice cubes in the glass and see what happens.
- Then pass on a mirror to the students and tell them to take out their breath.
- Ask, what happens?
- The mirror becomes blurred?
- Why this happens?
- This happens because your breath also contains moisture.
- Which cools down after touching the mirror.
- This happens on the windows also in winter.

Activity: written work

Distribute the worksheet and explain the task

Wrap-up Q/A

Is there water in the air?

Level: 2 Term: 4
Week: 6 Day: 3

Water in the air
Worksheet

Name______________________________

Date______________________________

Q 1) Draw what you have observed.

Q 2) What did I see?______________________________

____

____

____

____

Q 3) Is there water in the air?

____

Q 4) Water in the air is in the form of________________________.

(Water vapors, water droplets)

Q 5) Water vapor is____________________________.

(Water in gas form, water in solid form)

Level 2		Earth and Space systems
Term 4	Lesson Plan	
Week 6		
Day 4		

Topic: Air and water in the environment

Objective: To understand evaporation of water

Activity: 1 demonstration, Disappearing water
Activity: 2 Written work
Materials: Sponge, water, chalkboard, and chalk
Procedure
Warm-up Q/A

- Remind the students about previous lesson.
- Ask; is there water in the air?
- Water in the air is in what form?
- Then ask,
- How does this water go in the air?
- Tell students to put one of their hands up to their mouth and breathe on it.
- It will feel warm and moist.
- Ask, What makes your hand feel warm and moist? (It is the water and water droplets from your mouth.)
- Where does the moisture they feel on their hands go? (This moisture turns into invisible water vapor and goes into the air.)

Activity 1: demonstration

1. Ask students to wipe a chalkboard with a wet sponge.
2. Ask them to predict: a) Will the chalkboard dry by itself? b) How long will the chalkboard stay wet? c) Will the wet sponge dry by itself?
3. Have one student wipe the chalkboard with a wet sponge.
4. Observe what happens and compare the results with the predictions of the class. Where did the water that was on the chalkboard go? *(Into the air as water vapor.)*
5. Will we be able to see the water as it leaves the chalkboard?

Explanation

- Explain,

- Water on the chalkboard and sponge changed into gas (water vapors) and disappeared in the air. This happens due to the heat around us. We get this heat from Sun.
- Help them to understand, the water droplets evaporated and became a water vapor that went into the air.
- Then ask, have you seen water changing into gas in your home? (Water boiled for making tea and other purposes).
- When you heat water it changes into gas.
- Same thing happens here. The water on the chalkboard disappeared due to heat in the air around us.
- It changed into gas (water vapors).

Activity:2 written work

- Write the task on the board and explain.
- Q 1) What happened to the water on the chalkboard?
- Q 2) Why did water on the chalkboard disappear?
- Q3) What happens to the water when heated?

Wrap-up Q/A

What happens to the water when heated?

Level 2		Earth and Space systems
Term 4	Assessment	
Week 6		
Day 5		

Q 1) In what three forms water is found?

____

____

Q- 2) Encircle the correct answer.

a) Water is a

Liquid
Solid

b) Water has

Shape
No shape

c) Water has
Smell
No smell

d) Water has
Color
No color

Q 3) Is there water in the air?

____

Q 4) Water in the air is in the form of______________________.

(Water vapors, water droplets)

Q 5) Water vapor is______________________.

(Water in gas form, water in solid form)

Q 6) What happens to the water when heated?

Lesson Plans

Level 2
Term 4
Week 7

Week	Curriculum Strand	Topic	Day	Specific Objectives	Home work
7	Earth and space systems	Air and water in the environment	1	To explore forms of moisture in the environment	H.W
7		do	2	To explore the factors which cause things to dry quickly or slowly.	H.W
7		do	3	Assessment	
7	Structures and mechanisms	Movement	4	Revision	
7		do	5	Revision	

Level 2		Earth and Space systems
Term 4	Lesson Plan	
Week 7		
Day 1		

Topic: Air and water in the environment
Objective: To explore how rain clouds form
Activity: 1 Rain cloud
Activity: 2 written work
Materials: large bowl, water, a thick sponge, chalk, copy of the worksheet for each student
Procedure
Warm-up Q/A

- Remind the students about previous lesson,
- Ask, What happens to water when it is heated?
- Do you know where the water in puddles go after it rains?
- When you hang your clothes after washing how do they become dry?
- Where does all the water go?
- Listen to their responses and briefly discuss.
- (The water on earth evaporates and goes in the air)
- Then ask,
- Do you know from where the rain comes?
- Do you know from where the snow comes in winter?
- Have you seen dewdrops on the flowers and plants in the morning?
- From where do they come?
- Listen to their responses and briefly discuss.
- Then tell we will try to find out how the rain and clouds form.

Activity: demonstration

1. Set-up your things on the table in front of the class (bowl filled with water, sponge).
2. Tell the students to observe.
3. Dip the sponge into water.
4. Let the sponge absorb lots of water.
5. It will keep feeling more and more heavy as it is taking in more and more water.
6. Hold the sponge over the big bowl.
7. Explain, the sponge is like a cloud that has become really filled and heavy with water it has absorbed.
8. The bowl is like our earth.
9. Move the sponge in the air and pretend it is a cloud floating above the earth or bowl.
10. When the sponge (cloud) gets so heavy with water, it is like a rain cloud.
11. It has to let go of some of the water when it gets so heavy.
12. Gently squeeze the sponge and watch the water drop into the bowl.

13. This is like a rain cloud dropping water onto our earth.

Explanation

- With the heat of sun, water in oceans, rivers, lakes, ponds, streams, and puddles change into water vapors. It goes in the air and form clouds.
- Clouds absorb the little water drops that are in the air.
- Over time, clouds take in lots of water drops and become heavy with water.
- Then they have to let go some of the water.
- This is what happens when it rains or snows.
- In cold days you see dewdrops on plants.
- These vapors cool down and fall on the plants as happened with the cold glass of water in previous experiment.
- Check their understanding of the concept by asking questions.
- Ask,
- How does water go in the air? (heat changes water into vapors which goes in the air)
- What happens to the water in rivers, lakes and puddles?(It changes into water vapors)
- What makes up the clouds? (Water vapors make up clouds)
- From where does the rain come? (Rain comes from rain clouds)

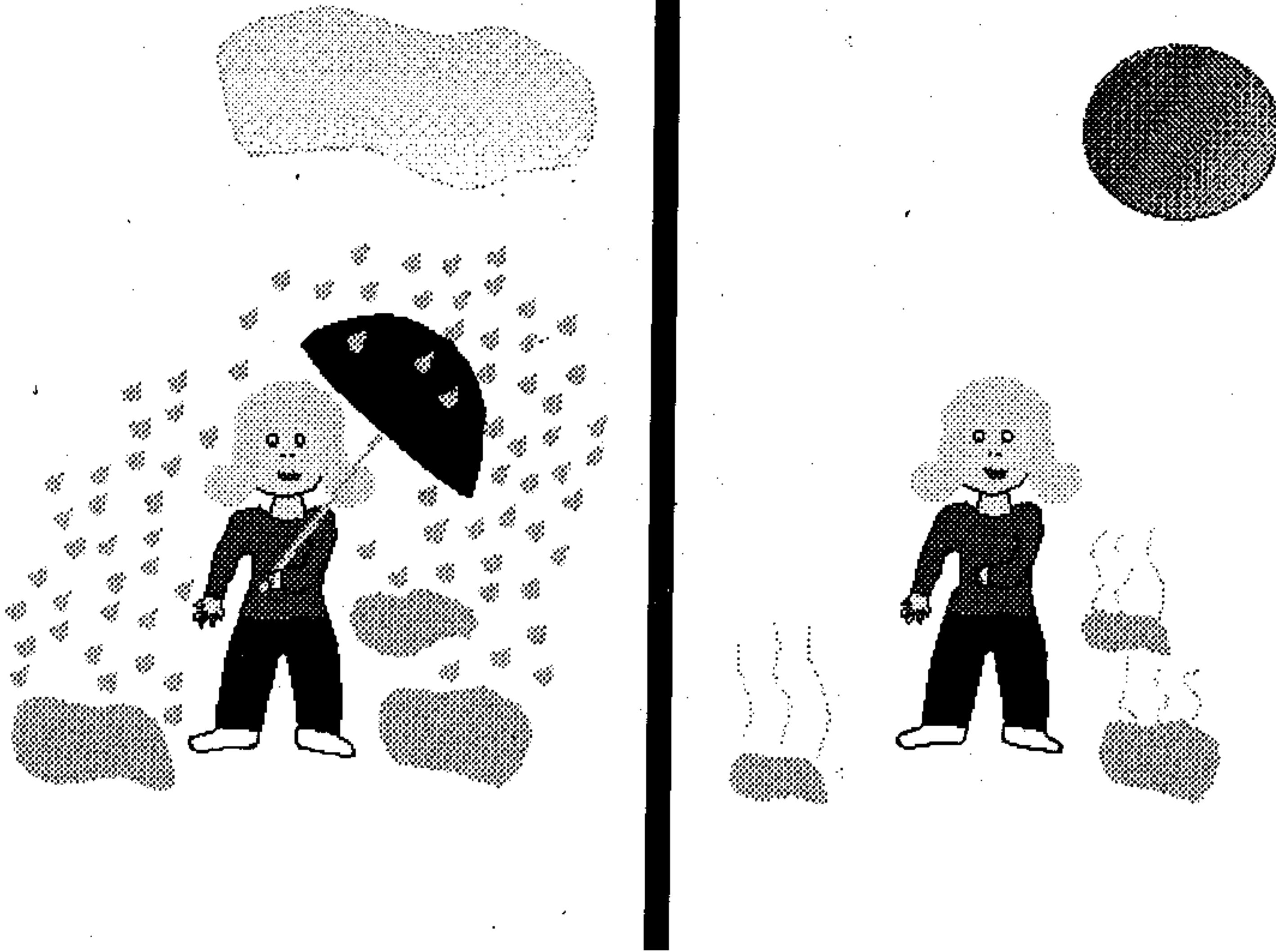
Activity: 2

- Distribute the worksheet and explain the task.

Wrap-up Q/A

What makes up rain and snow?

Level: 2 Term: 4
Week: 7 Day: 1

Moisture in environment
Worksheet

Look at the above pictures and answer these questions.

Q 1) How does water go in the air?

____

____

Q 2)What makes up the clouds?

____

____

Q 3) What makes up the rain?

____

____

____

Level 2		Earth and Space systems
Term 4	Lesson Plan	
Week 7		
Day 2		

Topic: Air and water in the environment

Objective: To explore the factors which cause things to dry quickly or slowly.

Activity: 1 what makes things dry

Activity: 2 written work
Materials: a bowl of water, paper towels, cardboard, paper plates and worksheet

Procedure:
Warm-up Q/A

- Ask the children how do their clothes get dry after they are washed.
- Are they hung on a line?
- Are they hung in Sun or in shade?
- What do you think makes them dry?
- Listen to their responses and briefly discuss.
- Then tell,
- Lets pretend these paper towels are clothes. We shall see what makes them dry and how long will it take to get them dry?

Activity:
Draw this chart on the board and ask the students to copy it in their notebooks.
Then ask them to note down their observations e.g

Object	At 11: 15	After 20minutes
Wet paper towel	Wet	Partially wet/ completely dry/wet

- Set up a table with all your materials in front of the class.
- Soak a pa per towel in the bowl of water.
- Squeeze out all the water that you can.
- Open the towel and lay it on a flat surface such as a table.
- Tell the children to check it and record time, and feel the towel after 20 minutes to see if it is dry.
- Leave the towel for drying and in the mean time have a discussion with the children.

Discussion

- Ask them to guess how long will it take it to dry?
- Do you think it will be completely dry after 20 minutes?
- What makes things to dry?
- After 30 minutes ask the students to check the towel, is it wet or dry? and record their observation.
- You should also record it in the table on the board.

Follow up discussion

- Ask the students,
- Is the towel dry or wet?
- If it is wet? Guess How much more time will it take to dry?
- If it has become dry? What made it dry?
- Will it dry quickly if we put it under the sun? or fan?
- What happens to things when they dry?

Explanation

- Things dry-up when the water present in them evaporates (moves out in the form of gas) and goes in the air.
- Explain that drying of things depends upon some factors, which are, the heat or temperature in the air, amount of moisture in the air and movement of air.
- If we put this paper towel under the Sun it will dry quickly due to the heat of sun.
- Heat will make the water evaporate very quickly.
- You must have observed that your clothes dry quickly in summers because of the high temperature. Heat turns water into water vapors. Where have you seen this? (Boiling water for making tea)
- Moving air also speeds up the drying of objects.
- For example if you put this paper towel under the fan it will dry up in less time.
- Similarly if there is more moisture in the air then things will take more time to dry.
- You must have seen it happens in the rainy season, clothes take more time to dry. Everything seems wet in the rainy season, because there is more moisture in the air.

Wrap-up Q/A

Distribute this follow up worksheet.

H.W Revise the work done in class.

Level: 2 Term: 4

Week: 7 Day: 2

Drying
Reinforcement worksheet

Q 1) What happens to things when they dry?

- **Water evaporates and goes in the air**
- **They get more water from the air**

Q 2) What makes things to dry quickly? Put a tick

- **Heat**
- **Moving air**
- **Moisture in the air**

Q 3) Which things will dry quickly? Put a tick.

- **Wet clothes hanging in the sun**
- **Wet papers in the room**
- **Wood placed under the sun**
- **Wet towel placed under the fan**

Q 4) Draw what you saw.

Level 2		Earth and Space systems
Term 4	Assessment	
Week 7		
Day 3		

Task:

Q 1)What makes up the clouds?

____

____

Q 2) What makes up rain?

____

____

Q 3) What happens to things when they dry? Put a tick

- **Water evaporates and goes in the air**
- **They get more water from the air**

Q 4) What makes things to dry quickly? Put a tick

- **Heat**
- **Moving air**
- **Moisture in the air**

Revision Plan

Level
Term 4
Week 8

Week	Curriculum Strand	Topic	Day	Specific Objectives
8	Structures and mechanisms	Movement	1	Revision
8	Earth and space systems	Air and water in the environment	2	Revision
8		do	3	Revision
8			4	Revision
8		do	5	Revision